

WHAT IS CLAIMED IS:

1. An image capturing apparatus comprising:
an image capturing part for capturing an image signal of a subject;
a detector for detecting a saturation voltage of said image capturing part;
an analog amplifier for amplifying said image signal; and
a controller for controlling an amplification factor of said analog amplifier on the basis of said saturation voltage.
2. The image capturing apparatus according to claim 1, further comprising:
an instruction part for instructing start of an image recording preparing operation on the basis of operation of a user, wherein
said detector detects said saturation voltage in response to said instruction of start of said image recording preparing operation by said instruction part.
3. The image capturing apparatus according to claim 1, further comprising:
a noise reduction part for performing a noise reducing process on said image signal, wherein
said noise reduction part changes said noise reducing process on the basis of said saturation voltage.
4. The image capturing apparatus according to claim 1, wherein
said image capturing part captures first and second image signals while setting different exposure amounts, and
said detector detects said saturation voltage on the basis of said first and second image signals.

5. The image capturing apparatus according to claim 4, wherein
said image capturing part adds output signals from a plurality of pixels included in said image capturing part, thereby obtaining said first and second image signals.

6. The image capturing apparatus according to claim 4, wherein
a first exposure is performed on said image capturing part, after that, a second exposure is performed on said image capturing part for exposure time different from exposure time of said first exposure, and said image capturing part reads charge signals accumulated in at least a part of a light-reception part included in said image capturing part at the time of said first and second exposures, thereby obtaining said first and second image signals.

7. The image capturing apparatus according to claim 4, wherein
said image capturing part can read the charge signals accumulated in said light-reception part included in said image capturing part from a plurality of fields including first and second fields, which are obtained by dividing a pixel array in said light-reception part, obtains said first image signal by reading charge signals accumulated in at least a part of said first field at the time of a first exposure, and obtains said second image signal by reading charge signals accumulated in at least a part of said second field at the time of said first exposure and a second exposure.

8. The image capturing apparatus according to claim 4, further comprising:
an electronic flash device for applying light to the subject, wherein

said image capturing part obtains said first and second image signals while setting different exposure amounts in accordance with a light emitting operation of said electronic flash device.

9. The image capturing apparatus according to claim 8, wherein

said electronic flash device performs a first light application, after that, a second light application of a light emission amount different from a light emission amount of said first light application, and

said image capturing part obtains said first image signal by reading the charge signals accumulated in at least a part of a light-reception part included in said image capturing part at the time of said first light application, and obtains said second image signal by reading the charge signals accumulated in at least a part of said light-reception part at the time of said second light application.

10. The image capturing apparatus according to claim 8, wherein

said electronic flash device performs a second light application after a first light application, and

said image capturing part can read the charge signals accumulated in said light-reception part included in said image capturing part from a plurality of fields including first and second fields, which are obtained by dividing a pixel array in said light-reception part, obtains said first image signal by reading charge signals accumulated in at least a part of said first field in first exposure time including a period of said first light application, and obtains said second image signal by reading charge signals accumulated in at least a part of said second field in second exposure time including a period of said first light application and the period of said second light

application.

11. The image capturing apparatus according to claim 1, wherein
said controller controls said image capturing apparatus so that said amplification factor to an image signal for detecting said saturation voltage is lower than that to an image signal for generating a live view image.

12. The image capturing apparatus according to claim 1, wherein
said detector detects said saturation voltage on the basis of a first image signal obtained without adding an output signal from a pixel included in said image capturing part and a second image signal obtained by adding output signals from a plurality of pixels included in said image capturing part other than said pixel.

13. The image capturing apparatus according to claim 1, wherein
in the case where a shutter speed value is set to a value larger than a predetermined threshold regarding occurrence of a camera shake in accordance with decrease in brightness of a subject when said amplification factor is held constant, said controller controls said image capturing apparatus so as to increase said amplification factor so that said shutter speed value is not set to a value larger than the predetermined threshold.

14. The image capturing apparatus according to claim 1, wherein
after said saturation voltage becomes equal to or less than a predetermined value, said detector does not detect said saturation voltage until driving of the image capturing part is interrupted.

15. The image capturing apparatus according to claim 1, wherein said detector detects said saturation voltage at predetermined intervals.

16. A program for making an image capturing apparatus achieve the following functions when executed by a computer included in the image capturing apparatus, the functions of:

obtaining an image signal of a subject by an image capturing part;
detecting a saturation voltage of said image capturing part; and
performing analog amplification on said image signal, wherein
an amplification factor of said analog amplification is controlled on the basis of said saturation voltage.

17. The program according to claim 16, wherein
when executed by said computer, said image capturing apparatus detects said saturation voltage in response to an instruction of start of an image recording preparing operation based on operation of the user.

18. The program according to claim 16, wherein
when executed by said computer, said image capturing apparatus performs a noise reducing process on said image signal and changes said noise reducing process on the basis of said saturation voltage.

19. The program according to claim 16, wherein
when executed by said computer, said image capturing apparatus obtains first

and second image signals while setting different exposure amounts, and detects said saturation voltage on the basis of said first and second image signals.

20. The program according to claim 19, wherein

when executed by said computer, said image capturing apparatus obtains said first and second image signals by adding output signals from a plurality of pixels included in said image capturing part.